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ABSTRACT

A two-group randomized multivariate analysis of covariance (MANCOVA) was used to investigate the effects of cognitive-behavioral hypnosis in reducing test anxiety and improving academic performance in comparison to a Hawthorne control group. Subjects were enrolled in a rigorous introductory psychology course which covered an entire text in one quarter. In addition to randomization, two covariates were used as a statistical control for the selection threat to internal validity. The subjects were measured on two covariates and two dependent variables. The covariates were a midterm course grade for introductory psychology and a pretest on the Test Anxiety Inventory. There were a decrease in test anxiety and improvements in achievement for the hypnosis group. The treatment gains were maintained at a 6-week follow-up. The study suggests that cognitive-behavioral hypnosis is effective in reducing test anxiety and in improving academic performance. Contains 15 references.
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Hypnotherapy and Test Anxiety:
Two Cognitive-Behavioral Constructs
The Effects of Hypnosis in Reducing Test
Anxiety and Improving Academic Achievement
In College Students

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Running Head: Hypnosis in Reducing Test Anxiety

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Abstract

This study described hypnosis and test anxiety as cognitive-behavioral constructs. A two-group randomized MANCOVA was utilized to investigate the effects of cognitive-behavioral hypnosis in reducing test anxiety and improving academic performance in comparison to a Hawthorne control group. Subjects were enrolled in a rigorous introductory psychology course which covers an entire text in one quarter. In addition to randomization, two covariates were used as a statistical control for the selection threat to internal validity. Subjects were measured on two covariates and two dependent variables. The covariates were a midterm course grade for introductory psychology and a pretest on the Test Anxiety Inventory (TAI). There was a decrease in test anxiety and improvements of achievement for the hypnosis group. The treatment gains were maintained at a 6-week follow-up.

The Relationship Between Hypnosis
and
Test Anxiety

Sapp (1989) points out an obvious relationship between hypnosis and test anxiety by indicating that they are both theoretical constructs. He notes that even though there are no totally accepted theories of hypnosis, the features are clearly known. I will discuss two major features of hypnosis. First, there is a major cognitive component of hypnosis which is visualization and imagination. Second, relaxation is another major feature of hypnosis. A hypnotized subject often reports feeling extremely relaxed. Hypnosis is a cognitive treatment since it encourages verbal reporting, role-playing and vivid imagining and hallucinatory visualizations (Kohn, 1984). Hypnosis is a behavioral therapy, since it has a relaxation component. The more explicit behavioral link between hypnosis and behavioral therapy lies in the fact that both therapies make use of expectancies, demand characteristics and reinforcement principles (Kroger, cited in Frankel and Zamansky, p. 199, 1976). Like hypnosis, there are two major components of test anxiety. For example, Liebert and Morris (1967) suggested that the two major components of test anxiety are worry and emotionality. Worry is a cognitive concern over performance, while the emotionality is a physiological arousal response to anxiety. Later, Morris and Liebert (1970) stated that the worry component interferes most with test performance of highly test anxious students. A similar line of research by Wine (1971) noted that the emotionality component is not consistently correlated with performance on cognitive tasks. In contrast,

the worry component is negatively correlated with cognitive performance. It debilitates performance by distracting attention from the task at hand, while the emotionality component can actually enhance performance if an individual has learned not to direct attention towards the physiological arousal (sweating, tension, heart pounding, and nervousness). Worry is the cognitive component of test anxiety, whereas emotionality is a behavioral component. In summary, just as hypnosis can be described in cognitive-behavioral terms, test anxiety logically belongs to the same paradigm.

Treatment Approaches for Test Anxiety

Behavioral and cognitive strategies have been shown to be effective in treating test anxiety (Spielberger, 1980). For example, relaxation therapy is effective in treating test anxiety (Ricketts & Galloway, 1984). Systematic desensitization has also been shown to be effective in treating the emotionality component of test anxiety, but has not been shown to consistently treat the worry component (Deluga, 1981). This is also the case for relaxation therapy. Cognitive therapies are effective in treating the worry component of test anxiety (Harris & Johnson, 1983). In summary, cognitive therapies focus on the worry component of test anxiety; whereas behavioral treatments have a greater impact on the emotionality component.

Qualitative Studies Using Hypnotherapy

as a Treatment for Text Anxiety

There have been many qualitative studies investigating the effects of hypnotherapy on test anxiety. Boutin (1978) used a case study to demonstrate the effectiveness of rational stage directed hypnotherapy in

treating test anxiety with first year nursing students. Cohen (1982) presented an excellent narrative description in which hypnotherapy was utilized at a counseling center to treat academic difficulties. Cercio (1983) combined hypnotherapy with fantasy relaxation technique to treat test anxiety. Finally, Herbert (1984) described how hypnotherapy was effective in treating test anxiety in medical students and residents.

Review of Relevant Quantitative Literature

There have not been many quantitative studies investigating the effects of hypnosis in reducing test anxiety (Sapp, 1989). Lieberman, Fisher, and Russell (1968) conducted an experimental study which indicated the effectiveness of hypnotic recorded techniques in removing students from academic probation. Gibbons, Kilbourne, Saunders, and Castle (1970) conducted a quasi-experimental study using student volunteers divided equally into three experimental groups. These researchers reported a statistically significant reduction in test anxiety due to hypnosis. Melnick and Russell (1976) reported a significant reduction of test anxiety with hypnosis. Finally, Boutin and Tosi (1983) using an experimental design reported the significant effects of hypnosis in reducing test anxiety. The present study will add to the literature by using quantitative methods to investigate the effects of hypnosis in reducing test anxiety and improving academic performance.

Method

Subjects

Volunteer students were recruited from introductory psychology courses at the University of Cincinnati during the fall quarter of 1987 and winter

and spring quarters of 1988. Subjects consisted of students enrolled in introductory psychology. These classes covered an entire text in a quarter. Subjects were recruited by means of advertisements and flyers which were posted throughout the university. Interested volunteers were contacted by telephone for a preliminary interview. During the phone interview, the experimenter presented a general orientation of the study. The following series of questions were asked to help determine if respondents were suffering from test anxiety:

When taking tests, do you often:

1. Find yourself feeling extremely tense and anxious?
2. Spend a great deal of time worrying about whether you will pass?
3. Go blank, even when you know the answer?
4. Feel hurried, inadequate, or panicked?

Respondents who matched this preliminary screening criteria and expressed an interest in the study were scheduled for an in-depth screening and orientation to the study. Initially, 100 subjects participated in this study; however, six withdrew from the hypnosis group. The resulting sample consisted of 44 subjects in the hypnosis group and 50 in the Hawthorne Control group. There were approximately an equal number of males and females in each group. The average age for both groups was 19.

Experimental Design

It was hypothesized that cognitive-behavioral hypnosis would be more effective in reducing test anxiety and in improving academic achievement than a Hawthorne Control group. A two covariate, two dependent variable completely randomized Multivariate Analysis of Covariance (MANCOVA) design

was employed. The two covariates were midterm grades in introductory psychology and the Test Anxiety Inventory (TAI). The two dependent variables were final grades in introductory psychology and a posttest on the TAI. One hundred subjects were randomly assigned to a hypnosis or Hawthorne Control group. Throughout the course of this study, six subjects withdrew from the treatment group.

Apparatus

Test anxiety was operationally defined by the Test Anxiety Inventory (TAI) (Spielberger, 1980) which is a pencil-and-paper self-report measure of test anxiety. The TAI was developed through factor analysis which isolated two factors, worry and emotionality. Spielberger (1980) reported validity coefficients of .82 for males and .83 for females. Reliability coefficients were reported at .80 for 3 weeks and .81 for 1 month. Using tables of norms, raw scores from the TAI are converted into standardized t-scores with a mean of 50 and standard deviation of 10.

Treatment Procedure

Four treatment scripts were utilized to define and standardize the hypnotic process. Each subject received four sessions of hypnosis, which lasted over a four week period. Session one was used to introduce subjects to the notion of hypnosis. It was stated to subjects that essentially all hypnosis is self-hypnosis. This first session laid the foundation for the other three sessions by emphasizing that it was necessary to practice what was to be learned in each session. During the first session, subjects were taught to relax and were given suggestions to help manage test anxiety. Suggestions were worded in such a way that subjects were told to have some

anxiety in order to perform well, but not high levels of debilitating anxiety.

During session one, subjects were taught a lever technique for trance induction. In session two, subjects induced a trance themselves using the lever technique learned in session one. Session two was a very critical part of the therapeutic process, since it was during this period that a desensitization procedure was incorporated within the hypnotic trance. There were three steps of the desensitization process. First, subjects were taught to establish a test anxiety hierarchy while in a trance. Obviously, it was necessary to explain the concept of a test anxiety hierarchy before the trance was initiated. Second, while in a trance, subjects were requested to repeatedly imagine items on their test anxiety hierarchy. This strategy resulted in the contiguous pairing of aversive items on the test anxiety hierarchy and a counterconditioning response, the relaxation from the hypnotic trance. In the third part of the desensitization process, subjects were asked to imagine coping with as many items as possible on their test anxiety hierarchies. For session three, subjects were taught a hand-clasp technique of trance induction. Specifically, subjects were asked to clasp their hands in front of their bodies and exert tension in their hands. During the final session, number four, subjects were asked to induce a trance using any method of choice.

In summary, each script emphasized that subjects would be well prepared for exams. Similarly, each script incorporated ego-strengthening techniques designed to raise levels of self-esteem. Finally, the control

group monitored their study behavior during the four week period that the treatment group received cognitive-behavioral hypnosis.

Results

As a frame of reference for this section, the means and standard deviations for the dependent variables are presented in Table 1. The means and standard deviations for the follow-up data are presented in Table 3. The adjusted means and standard deviations for the grades variable were converted into standardized t-scores, using a mean of 50 and a standard deviation of 10. In terms of final grades in introductory psychology for the hypnosis group, the mean and standard deviation, respectively, were 54.02 and 8.29. The respective mean and standard deviation for final grade point averages for the Hawthorne Control group in introductory psychology were 48.62 and 10.02. In reference to the reduction of test anxiety, the adjusted mean and standard deviation for the hypnosis group were 51.50 and 5.51, respectively. In contrast, the corresponding adjusted mean and standard deviation for the Hawthorne Control group were 53.18 and 7.25. Finally, the mean and standard deviation for follow-up measures on the TAI were 50.14 and 4.17, respectively. The main result for the MANCOVA determined that the adjusted population mean vectors were significantly different. The multivariate $F=18.27$ (corresponding to Wilk's Lambda) is significant beyond the .001 level. The univariate Analysis of Covariance (ANCOVA) indicated that both dependent variables contributed to the multivariate significance. The univariate F 's for final grades and the posttest on the TAI, respectively, were: $F=31.67$, $p < .001$ and $F=8.65$, $p < .001$. Squared multiple correlations for each dependent variable regressed

separately on the two covariates, indicated that 41% of within group variability on final grades in introductory psychology is accounted for by the two covariates. The treatment group had significantly higher grades and lower levels of test anxiety in comparison to the Hawthorne Control group. Thus, MANCOVA indicated that cognitive-behavioral hypnosis reduced test anxiety and improved academic performance.

Post Follow-up Analysis

Follow-up data was gathered on the experimental group in order to determine if the treatment effects were maintained. Comparison of posttest measures of the TAI with follow-up scores indicated that a significant reduction in test anxiety was maintained for the hypnosis group $t(20)=6.13$, $p < .001$.

Discussion

This study suggests that cognitive-behavioral hypnosis is effective in reducing test anxiety and in improving academic performance. These results are in congruence with the work of Boutin and Tosi (1983) who reported statistically significant reductions in test anxiety and improvement in grades using hypnosis. From the present study, follow-up data suggested that the positive effects of hypnosis were maintained beyond the initial four treatment sessions. With the use of a Hawthorne Control group, reactive effects were controlled. Reactive effects are threats to external validity that can result in changes in behavior that can occur by simply participating in an experiment. Thus, the Hawthorne effect was controlled by interacting with the control group and by having subjects monitor their daily activities and amount of time invested in studying. Similarly, the

two covariates, in addition to randomization, controlled for the selection threat to internal validity. Due to the fact that there is a small number of quantitative studies investigating the effects of hypnosis in reducing test anxiety and academic performance, it is recommended that this study be replicated. Finally, as Sapp (1989) suggested, data dealing with treating the components of test anxiety are needed. He suggested investigating the interactions between cognitive and behavioral components of test anxiety. Hypnosis, which can be viewed as a cognitive-behavioral construct, can be useful in future research by leading to hypotheses that can be empirically tested.

References

- Boutin, G. E., & Tosi, D. J. (1983). Modification of irrational ideas and test anxiety through rational stage directed hypnotherapy. *American Journal of Clinical Hypnosis*, 39(3), 382-391.
- Cerio, J. E. (1983). The use of hypnotic elements and audio recordings with fantasy relaxation technique. *Personnel and Guidance Journal*, 62(7), 436-437.
- Cohen, H. A. (1982). *The use of clinical hypnosis in a college counseling center*. (ERIC Document Reproduction Service No. ED 22 804)
- Deluga, R. (1981). *The effects of rational behavior therapy upon law students test anxiety and academic grade point average*. Unpublished doctoral dissertation, Cincinnati, OH.
- Frankel, F. H. & Zamnasky, H. S. (1976). *Hypnosis at its Bicentennial*. New York: Plenum Press.
- Gibbons, D., Kilbourne, L., Saunders, A., & Castles, C. (1970). The cognitive control of behavior: A comparison of systematic desensitization and hypnotically-induced "directed experience" technique. *American Journal of Clinical Hypnosis*, 12(3), 141-145.
- Harris, G., & Johnson, S. B. (1980). Comparison of individualized covert modeling, self-control desensitization, and study skills training for alleviating test anxiety. *Journal of Consulting and Clinical Psychology*, 48, 186-194.

- Herbert, S. V. (1984). A simple hypnotic approach to treat test anxiety in medical students and residents. *Journal of Medical Education*, 59(10), 841-842.
- Kohn, T. (1984). *Clinical Applications of Hypnosis: A manual for Health Professionals*. Illinois: Charles Thomas Publisher.
- Lieberman, L. R., Fisher, J. R., Russell, T., & King, W. B. (1968). Use of tape recorded suggestions as an aid to probationary students. *American Journal of Clinical Hypnosis*, 12(1), 341-343.
- Liebert, R. & Morris, L. (1967). Cognitive and emotional components of test anxiety: A distinction and some initial data. *Psychological Reports*, 20, 975-978.
- Melnick, J., & Russell, R. W. (1976). Hypnosis versus systematic desensitization in the treatment of test anxiety. *Journal of Counseling Psychology*, 23(4), 291-295.
- Morris, L. & Liebert, R. (1979). Relationship of cognitive and emotional components of test anxiety to physiological arousal and academic performance. *Journal of Consulting and Clinical Psychology*, 35, 332-337.
- Sapp, M. (1989). Hypnotherapy in the treatment of test anxiety. *The Behavior Therapist*, 12(9), 210.
- Spielberger, D. C. (1980). *Test anxiety inventory*. CA: Consulting Psychologists Press.

Table 1

Means for Final Averages Converted into t Scores

	<u>M</u>		<u>SD</u>
	<u>Unadjusted</u>	<u>Adjusted</u>	
Hypnosis Group	54.02	54.02	8.29
Control Group	48.62	48.62	10.02

Table 2

Means for Posttest TAI

	<u>M</u>		<u>SD</u>
	<u>Unadjusted</u>	<u>Adjusted</u>	
Hypnosis Group	51.50	51.50	5.51
Control Group	53.18	53.18	7.25

Table 3

Means and Standard Deviations for Follow-up Data on the TAI

<u>M</u>	<u>SD</u>
50.14	4.17

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